National Institute of Environmental Health Sciences

Higher trends but larger uncertainty and geographic variability in 21st century temperature and heat waves

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Abstract:

Generating credible climate change and extremes projections remains a high-priority challenge, especially since recent observed emissions are above the worst-case scenario. Bias and uncertainty analyses of ensemble simulations from a global earth systems model show increased warming and more intense heat waves combined with greater uncertainty and large regional variability in the 21st century. Global warming trends are statistically validated across ensembles and investigated at regional scales. Observed heat wave intensities in the current decade are larger than worst-case projections. Model projections are relatively insensitive to initial conditions, while uncertainty bounds obtained by comparison with recent observations are wider than ensemble ranges. Increased trends in temperature and heat waves, concurrent with larger uncertainty and variability, suggest greater urgency and complexity of adaptation or mitigation decisions.

Source: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2739867

Resource Description

Climate Scenario :

specification of climate scenario (set of assumptions about future states related to climate)

Special Report on Emissions Scenarios (SRES), Other Climate Scenario

Special Report on Emissions Scenarios (SRES) Scenario: SRES A1, SRES A2, SRES B1

Other Climate Scenario: SRES A1F1

Exposure :

weather or climate related pathway by which climate change affects health

Temperature

Temperature: Extreme Heat, Fluctuations

Geographic Feature:

resource focuses on specific type of geography

None or Unspecified

Geographic Location: ☑

resource focuses on specific location

Global or Unspecified

Health Impact: ☑

specification of health effect or disease related to climate change exposure

Health Outcome Unspecified

Mitigation/Adaptation: ☑

mitigation or adaptation strategy is a focus of resource

Adaptation

Model/Methodology: ☑

type of model used or methodology development is a focus of resource

Exposure Change Prediction

Resource Type: ☑

format or standard characteristic of resource

Research Article, Research Article

Timescale: ☑

time period studied

Long-Term (>50 years)

Vulnerability/Impact Assessment: ☑

resource focus on process of identifying, quantifying, and prioritizing vulnerabilities in a system

A focus of content